ROUTING AND RECORD SHEET

SUBJECT: (Optional)

Replacement of the Cable Dissemination System

FROM:		EXTENSION	NO.
D/CO 2B07			
			DATE

25X1

TO: (Officer designation, room number, and building)	DATE		OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
	RECEIVED	FORWARDED		
1. D/ODP 2D0105 HQS		10/17		INFO only No Action Required
2. E O		13 oct	W	
3. DD	EJ	13 ox		
4. C/MS		14 ov	Copy to DD/P C/SPS Also to DD/A, pls.	Done 10/14
5. PABG — ALW au SS B.HB.				
6.		23 oct 81		
7. E² file -				
8.				
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10.				
11.				
12.				
13.				
14.				
15. MHS CDS				

ODP # ☐1-1342   UC-11181-855   7 OCT 1981

MEMORANDUM FOR: Chief, Information Management Staff, DO
                 Chief, Management Staff, DDA
                 Communications Requirements Coordinator, DS&T
                 Communications Requirements Coordinator,
                  NFAC PME Staff

25X1   FROM: ☐
                 Director of Communications

        SUBJECT: Replacement of the Cable Dissemination System (U)

        1. The Office of Communications, as part of the Communi-
cations Network Recapitalization Program, is presently in the
early stages of planning for the replacement of the Cable
Dissemination System (CDS). Attached for your information is
a paper defining the scope of the replacement project. The
paper is the result of a joint Office of Communications and
Office of Data Processing investigation into alternative
approaches available for replacing CDS. (U)

        2. The project team is now in the process of documenting
the system requirements of the CDS replacement. In order that
concerned components might have the opportunity to contribute
to this process, we would like to identify a point of contact
within your office with whom we could discuss requirements for
cable communications support in the Headquarters area. (U)

        3. The Office of Communications point of contact is
25X1   ☐ and he is available on extension ☐ secure   25X1
to discuss the project. We would appreciate the identification
of the appropriate point or points of contact by 2 November 1981,
to allow the requirements definition process to continue. (C)
A9c5.2   25X1

        cc: D/ODP

        Attachment:
          As Stated

        Downgrade to "Confidential"   25X1
        Upon Removal of Attachment

        WARNING NOTICE - INTELLIGENCE
        SOURCES & METHODS INVOLVED

RECAPITALIZATION PROGRAM

MESSAGE HANDLING FACILITY

APPENDIX

CONTENTS

Section 1

EXECUTIVE OVERVIEW

1.1   SUBJECT

This document addresses a program to replace the Cable
Dissemination System (CDS).   CDS is a computer system
performing dissemination, printing,   and distribution of
cables sent to or from Headquarters.   Because of increasing
traffic volumes, expenses involved in modifying the existing
system,   and new requirements, CDS is expected to face
difficulty satisfying all requirements placed upon it by the
mid-1980's.   For purposes of the following discussion, a
replacement system performing CDS functions will be referred
to as the Message Handling Facility (MHF).   (S) A9c2.1

      This replacement effort is proposed as a transition
from the existing configuration to an initial operational
capability in a general purpose environment.   This initial
capability will   perform CDS functions and   have the
flexibility to accommodate enhancement,   leading to a final
capability satisfying   the   full   spectrum   of   cable
dissemination and delivery requirements.   Examples of these
requirements include facilities to support the concepts of
electronic cable delivery, -origination, -mail systems, and
on-line cable storage systems performing registry and
archive functions. (S) A9c2.1

1.2   CURRENT SITUATION

Since the CDS functional specifications were formulated in
the early 1970's, the system has been challenged by evolving
user service requirements.   Both hardware and software
modifications have been made to CDS to meet the growing
needs.   Future expansion of CDS using current hardware and
software is impractical due to the limited capability of the
hardware, the obsolete design, the limited availability of
trained personnel, and the high labor costs and risks
associated with modification to the existing software.   (S)
A9c2.1

      Cable handling systems have been developed external to
CDS in order to meet customer requirements for electrical

copy as well as hard copy, to satisfy the growing need for
CDS connection to other computer systems, and to ensure the
timely handling of an increasing volume of traffic.
Examples of these systems are: The Office of Data
Processings (ODP) Message Processing System (MPS), which
electrically distributes selected messages directly to
customers' application programs via the ODP network; NFAC's
Message Routing System (MRS), which sorts traffic prior to
distribution, a function the Cable Secretariat performs
manually; and the Automated Printing and Reproduction System
(APARS), presently under development by OC, which speeds up
the manual distribution function now handled by Cable
Secretariat. (S) A9c2.1

     The Automated Communication Terminal – Originating
(ACT-O) system, which handles formatting and editing of
originating messages, predates CDS and is implemented on
hardware that is no longer commercially supported. With the
current spare parts on hand and by refurbishing its
peripherals, it is projected that the ACT-O can continue to
provide reliable service until the mid-1980's.
Incorporation of the ACT-O functions into the MHF is
planned. (S) A9c2.1

1.3   MANAGEMENT ISSUES

The major growing customer requirement on CDS is to provide
electrical copy to other computer systems. This need is
expected to increase as major information processing
systems, such as SAFE and COMET, become fully operational.
SAFE and COMET will be major users of CDS; therefore, their
present and projected needs will be a part of the MHF system
requirements. However, the operational dates of these
systems do not effect this development, as CDS can
accommodate their near term requirements. (S) A9c2.1

1.4   THE DEVELOPMENT APPROACH

The development effort will be broken into the logical
phases used in most large system efforts today: Problem
definition, requirements, system design (both preliminary
and detailed), development of software (programming),
testing and acceptance of the system. This paper is the
product of the problem definition phase of the effort. (S)
A9c2.1

     The next phase, requirements, will identify the
baseline functions of the current CDS and ACT-O that must be
delivered in the initial operating capability (IOC) of the

MHF.   Additional requirements will be addressed in order to
ensure the design is open-ended and flexible enough to be
easily modified over the system life. (S) A9c2.1

One major evaluation during the requirements phase will
be the feasibility of using existing in-house ODP hardware
(IBM 370/158),   which will be available in the time frame
needed for this system. A decision must be made early in
the requirements phase in order to plan for procurement of
hardware if this in-house hardware will not satisfy the
requirements.   A second major consideration during the
requirement phase will be the determination of the space
requirement of the proposed system,   due to the long lead
times needed in space planning. (S) A9c2.1

The system will be introduced in phases,   replacing
obsolete hardware with commercially-supplied equipment and
expanding upon the new system as required.   Therefore, the
new system will be designed to operate on a family of
general-purpose computers that will allow ease of future
expansion to the newer, faster machines without a system
redesign. Software will be written in a high-level language
in order to minimize development costs and to improve the
maintainability of the software. (S) A9c2.1

1.5   CONCLUSION

The existing cable dissemination functions can be performed
on a general purpose computer system.   Transfer of these
functions can occur in a timely and cost-effective fashion.
This cooperative effort between the Data Processing and
Communications offices will provide the Agency with a new
flexibility in   dealing   with   future communication
requirements.

Section 2

BACKGROUND

The interchange of electrical information between
Headquarters and other members of the Intelligence Community
is controlled by two computer switching centers. The
Message Automated Exchange (MAX) interconnects members of
the Agency's network, AXANET, and provides .lines of
communication to other networks. The Data Exchange (DATEX)
provides a similar switching service for users who
communicate data traffic, which is typically produced by and
used in automated systems. DATEX also processes certain
segments of narrative traffic. The Headquarters
communications terminal functions are performed by the Cable
Dissemination System (CDS) and the Automated Communications
Terminal-Originating (ACT-O). This section describes the
relationships between these systems and their present
status. (S) A9c2.1

2.1   INITIAL CDS DESIGN

The CDS was originally conceived as the interface between
Headquarters personnel who send and receive cables and OC's
switches. For outgoing traffic it accepted hard copy
originating traffic, converted it to electrical form, and
passed it to the ACT-O for reformatting and subsequent
transmission to the addressee via MAX. CDS also received
incoming electrical cable traffic from MAX; analyzed the
traffic; and, based on the analysis, produced hard copies
for each of the appropriate action and information
components within the Agency. The actual analysis operation
was accomplished by a combination of CDS software and
decisions input from human analysts and resulted in a
dissemination list. Distribution (the act of moving the
disseminated messages to the customers) was routinely
accomplished by printing the messages on Cable Secretariat
printers, reproducing the number of copies required on Xerox
machines, and manually distributing the printed copies to
the customers. CDS also included a limited electrical
distribution capability. (S) A9c2.1

2.2   REQUIREMENTS SINCE INITIAL CDS DESIGN

Since the CDS functional specifications were formulated in
the early 1970's, the system has been required to cope with
steadily increasing traffic volumes and increasingly
sophisticated customers who need, in addition to the
traditional hard-copy services, electrical distribution of
cable traffic to and from applications programs residing in
other computer systems. Both kinds of service must be
provided in an environment of changing customer
capabilities, machine-to-machine communications protocols,
and faster response time requirements. Consequently, CDS
hardware and software have undergone constant modification
to improve system performance. (S) A9c2.1

2.3   CDS ENHANCEMENTS

A performance study completed in 1978 identified several
bottlenecks and recommended software rewrites to eliminate
them. A disk upgrade was completed in 1979 which increased
the system's throughput and on-line storage capacity.
Additionally, the CDS contractor, [   ] of
[   ] has announced the availability of an
expanded main memory which should improve system performance
and increase available reserve memory. The Office of
Communications has contracted [   ] to modify CDS for
the purpose of incorporating this new memory into the
system, and delivery is scheduled for spring 1982. At the
conclusion of this effort, the system should have the
throughput necessary to accommodate traffic levels
anticipated through the mid-1980's. While some expansion of
CDS to include new functions will then be theoretically
possible, only maintenance level changes will be practical
because of the limited availability of trained personnel,
the labor intensity required to change the system, and the
risk associated with major change. (S) A9c2.1

2.4   ACT-O

The ACT-O is a companion system to CDS and handles
formatting and editing of originating messages before they
are sent to MAX for transmission. ACT-O predates CDS and is
implemented with processors and peripherals no longer
commercially supported. A staff study completed in early
1980 examined alternatives available to prolong the lifespan
of the ACT-O hardware, which has essentially expired.
Because of the historical reliability of the processor
itself and the complement of processor spares on hand, the
study recommended refurbishment of the peripherals relying

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on moving parts for their operation (e.g., disk and tape
drives). The ACT-O system is presently operating in a
reduced configuration during the initial attempts to
refurbish these peripherals. When this refurbishment is
complete, ACT-O is also expected to provide reliable service
through the mid-1980's. (S) A9c2.1

2.5   OTHER SYSTEMS

For the near term (mid-1980's) then, the existing hardware
and software should be able to maintain the level of service
provided today. System enhancements involving minor changes
in CDS function or operation will be possible, but
expensive. Enhancements involving functional changes will
be more economically implemented in new systems
supplementing CDS, rather than by changing the existing
hardware and software. Various customers, because of
limited CDS flexibility, have implemented their own systems
to improve cable delivery through electrical distribution.
The primary electrical circuit for these cables is the
connection to ODP. The Message Processor System (MPS) in ODP
receives the cables in electronic form from CDS and then
distributes them to all the customers as indicated on the
CDS dissemination list. The customers are, in reality,
computer systems and terminals within the ODP Ruffing
Computer Center; e.g., OCR's COLTS (Computer On Line Text
Search) and OLTA (On Line Text Analysis) data base storage
and retrieval systems. One of the customers, NFAC, has
developed a printing and duplicating system called the
Message Routing System (MRS). As more dissemination points
are recognized by MRS, the printing and duplicating services
provided by Cable Secretariat for NFAC will be decreased.
(S) A9c2.1

2.6   NEW INITIATIVES

Initiatives to improve cable service are expected to
continue to take the approach of implementing new systems in
an add-on fashion to the existing facilities. Changes in
CDS and ACT-O are too labor-intensive and expensive to be
cost effective. As an example, the Automated Printing and
Reproduction System (APARS) is being designed to emulate the
present CDS printers. APARS is a system of
computer-controlled printers presently under development by
OC which will result in enhancements to cable services but
require no modification to CDS hardware or software. APARS
will:

Replace the present Cable Secretariat Reproduction
Section printers.

Sort, print and duplicate messages.

Allow high-volume users to have messages sent
electrically to a remote APARS for printing rather than
being printed in the Cable Secretariat.

Allow analysts at remote APARS installations to add to
the CDS dissemination list before printing and sorting.

Allow for long-term storage of message traffic at the
remote APARS sites for reference purposes. APARS will
not change the time CDS takes to disseminate messages but
will speed the distribution process by reducing the
manual duplicating and sorting requirements of the Cable
Secretariat. (S) A9c2.1

    There is an increasing demand for CDS delivery of
cables in electronic form instead of, or in addition to,
hardcopy as evidenced by APARS and the proposed NFAC SAFE
and DO COMET systems. Since CDS does not have usable
electrical ports to service these systems, CDS traffic
is being routed to the DATEX system. The DATEX system
switches the cables to appropriate circuits (e.g., MPS,
SAFE, COMET and future systems). (S) A9c2.1

Section 3

SCOPE

The scope of the MHF project is defined below in terms of an
initial capability and a full capability. The full
capability is described as the general direction in which
the local cable handling network will evolve, and will be
explored in more detail as part of the requirements phase.
The initial capability is proposed as the transition to a
flexible environment from which evolution to full capability
can proceed. (S) A9c2.1

3.1   FULL OPERATIONAL CAPABILITY (FOC)

As described in the preceding section, the Cable
Dissemination System today finds itself the center of the
Agency's local cable handling network but unable to grow and
change as the network requirements evolve. This evolution
is proceeding in several directions:

1. Delivery--Hard copy distribution was seen as the
    primary means of delivery from CDS. To support the
    increasing need for electrical delivery, an ad hoc
    network of message switches (as implemented by MPS,
    DATEX and APARS) is appearing. MHF at FOC will fully
    support electrical delivery, but will do so via the
    MERCURY network switch. MHF will thus become a
    service of the general communication network, rather
    than a switching node for its own cable distribution
    network. Functions such as queueing when a delivery
    circuit is not operational, switching via alternate
    routes, etc., will be accomplished by the MERCURY
    network. The centralized printing of cable traffic by
    APARS, followed by sorting and hard copy
    distribution, will be retained for those requirements
    where an electrically delivered copy is not feasible
    or appropriate and for backup purposes. (S) A9c2.1

2. Origination--Just as delivery, origination today is
    implemented by the movement of hard copy cables. As
    general services become available to create, edit,
    coordinate and release a cable electrically, the
    communication network will move messages to MHF at
    FOC without requiring the creation of paper. Hard

copy origination services will continue to be supported as a backup and for those cases where electric origination is not available. (S) A9c2.1

3. Electronic Mail--The MHF customer will have the ability to request delivery to any, all, or a combination of the following: a general (non-SAFE) electronic mail system, specialized information processing systems, the conventional paper mail system, and advance copy circuits (e.g., watch offices). The electronic mail concept will be fully supported by MHF, although MHF itself will not provide the electronic mail facilities. (S) A9c2.1

4. New Message Types--With increased electrical communication capabilities in the years ahead, particularly to overseas locations, the requirement will come to reduce the quantity of information now delivered by pouch. To the extent existing policies for dissemination of cable and telepouch traffic will not apply to this information, MHF will have to have the flexibility to accommodate new cable types and dissemination policies. The transfer of information in the Headquarters area by memoranda (or any document where the originator determines full dissemination) is outside the scope of the MHF. This transfer will more appropriately be provided by a general electronic mail service and be supported by the communication network. However, for cases where document dissemination by MHF is desired, the electronic mail system can identify the document as command channel correspondence and MHF dissemination will follow. (S) A9c2.1

5. Electronic Registry--Because the MHF will not provide long-term, on-line storage and retrieval functions, it will not serve as a registry itself. It will, however, support the electronic registry concept. A centralized cable archive could be provided as an additional network general service function. This archive will permit centralized control of cable storage and redistribution, thus preventing unnecessary duplicate storage. Due to differing requirements for individual registries and compartmentation of information, multiple electronic registries might be more practical and this concept will also be supported. (S) A9c2.1

3.2   INITIAL OPERATIONAL CAPABILITY (IOC)

The first step in moving to this full capability is the
transition from the existing configuration to a general
purpose environment.   The accomplishment of this transition
forms an initial operating capability consisting of the CDS
and ACT-O functions.   IOC will provide the basis for this
evolution while supporting the local cable network as CDS
currently does.   New functions and CDS enhancements are
beyond the scope of IOC, but will be incorporated as part of
the final capability.   The remainder of this document
addresses concerns related to the transition to the initial
operational capability. (S) A9c2.1

Section 4

IOC MANAGEMENT ISSUES

4.1 FUNDING

The costs of implementing the Message Handling Facility have
not been estimated in detail, and the effort is presently
not funded.   Cost estimates will be prepared as part of the
requirements phase and will form the basis for requesting
budget support.   These estimates will address the following
areas:

1. Hardware Acquisition: The present system includes a
    computer system, high-speed printers, disks and other
    peripherals, a network of some fifty terminals, and
    front end mini-computers.   With the exception of the
    high-speed printers, which are being replaced as part
    of the APARS program, the presently-installed CDS and
    ACT-O hardware will be replaced as part of the MHF
    effort. (S) A9c2.1

2. Development: If the project development is
    undertaken as a joint OC/ODP internal software effort
    using Agency-owned hardware,   these costs should
    consist mainly of human resources and computer time
    to implement the design.   If the project is
    undertaken as an external development, funds will be
    required to execute the contractual cycle. (S) A9c2.1

3. Installation: A significant effort will be required
    to prepare the Headquarters Signal Center facilities
    for the MHF, and to perform the installation and to
    test the system.   The magnitude of these tasks will
    be estimated as a coordinated effort with the
    Domestic Networks Division. (S) A9c2.1

4.2 PERSONNEL

As a joint OC/ODP/CDS user project,   the MHF will have
personnel   implications   for   several   Offices.   Prior
coordination has established the nucleus of a project team
consisting of individuals from OC and from ODP.   This team,
with the   addition of representatives from   the Cable

Secretariat and Signal Center, and input from the CDS and
ACT-O programming staff and CDS customers, will carry out
the tasks defined in the requirements phase. Personnel
commitments for the remaining phases of the project will be
identified in the requirements phase and will depend on the
implementation chosen. (S) A9c2.1

Specific short-term support requirements and options will
be examined in the requirements phase, but certain long-term
personnel requirements are independent of the
implementation. OC has traditionally maintained its
computer systems at the assembly language level and relied
on the computer vendor to provide systems programming,
hardware/software upgrades, and most program development.
With the transition to general purpose hardware and software
comes the opportunity to implement new facilities in
high-level languages and a need for system programming
support. These skills, which will be essential for
long-term maintenance of the MHF, are presently not
available in OC. Options to acquire the skills include
retraining OC personnel presently involved in assembly
language programming, hiring new people, and entering into a
long-term support arrangement with ODP. (S) A9c2.1

4.3 ORGANIZATIONAL IMPACT

The Message Handling Facility at IOC, as a replacement for
CDS and ACT-O, will have little impact on traditional ways
of doing business. While there will be some changes in
operation and hardware visible to the Cable Secretariat,
these changes should not affect the customers. Significant
changes in daily operations will come, though, when
electrical distribution and origination capabilities are
added. As the Agency moves away from a reliance on hard
copy services and toward electrical services, MHF
requirements will change. MHF will not be a driving force
in this move, but will be able to keep pace with and support
it. (S) A9c2.1

4.4 FLEXIBILITY

The flexibility to control, direct and account for the flow
of electrical information in the Headquarters area is
expected to become an increasingly critical management
concern. Already CDS is tasked with providing selected
cable traffic to ODP users and specialized information
processing systems such as SAFE, COMET and CMASS.
Requirements to provide connectivity based on message
content from the communications network to specialized

systems will likely increase as computer hardware costs
decrease.   Meeting these requirements is labor-intensive,
time-consuming and expensive in today's environment.
Therefore, the new design must be open-ended and flexible to
meet these growing requirements. (S) A9c2.1

4.5   SECURITY

The interconnection of computer systems provides both
increased risk of information compromise and opportunity to
control information access. This issue will be addressed as
part of the system design to ensure the access and control
requirements are fully satisfied by the system. (S) A9c2.1

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4.6   IMPACT OF NEW SYSTEMS

The next few years will see the arrival of such systems as
SAFE, CRAFT and MERCURY.   Each of these systems,   in
providing telecommunications or information processing
capabilities that do not exist today, may have significant
impact on the very nature of traffic in the communications
network.   For example,   the   growth of   interactive
communications, as supported by MERCURY and CRAFT,   may
reduce the use of traditional cables. However, the improved
access to Headquarters data bases, as provided by SAFE, may
increase the volume of traffic in the cable network.   While
the specific interfaces for these systems must be provided,
the MHF program makes no attempt to analyze the possible
long-term communications impact of these new systems. (S)
A9c2.1

    A spin-off   from the SAFE   project is   a wideband
communications   bus   designed   to   provide   end-to-end
cryptographic protection and connectivity between terminals
and host computers. The MHF could conceivably make use of
this bus in several ways; e.g., for general message
distribution, computer-to-cable analyst communication, or
for advance copy distribution. The bus, now in development,
may extend in some form to the Headquarters area
outbuildings,   thus   greatly   expanding   the   number   of

individuals who potentially have direct access to electrical
distribution. (S) A9c2.1

Another system presently in development is ODP's AIM
(Automated Information Management System). As an electronic
mail system, AIM may be an appropriate Agency-wide vehicle
for the origination and delivery of cables to the individual
level. (S) A9c2.1

4.7   IMPLEMENTATION OPTIONS

Successful implementation of the MHF can be achieved either
through an internal joint OC/ODP effort,   through   the
contracting process, or through a combination of both.   In
addition to the usual tradeoffs to be evaluated in comparing
internal versus external efforts,   are some additional
considerations.   First,   an in-house effort will   provide
opportunity for OC programmers (who will later be tasked
with software maintenance) to become involved in and
influence the development effort.   Next,   use of the
contracting option will delay realization of the initial
operating capability.   This may mean the MHF cannot be
brought up in advance of MERCURY, and will therefore have to
compete with MERCURY for heavily committed OC resources
during installation,   test and acceptance.   Finally, the
in-house development effort timing is such that hardware
(IBM 370/158) being made available by ODP can be used.   (S)
A9c2.1

4.8   FACILITIES

The permanent location   for the MHF will   be in the
Headquarters Signal Center,   where   CDS and ACT-O are
presently located.   Signal Center renovations to accommodate
the MHF will have to be jointly addressed by the project
team, OC's Domestic Networks Division and ODP's Engineering
Division during the system design phase. (S) A9c2.1

A second facilities issue concerns the disposition of the
hardware between the time it is no longer required by ODP
and the time it is installed in the Signal Center. Ideally,
temporary facilities would be made available in order that
an operational development system could be configured.   If
temporary facilities cannot be   made available,   other
arrangements (such as program   development on the ODP
systems) will have to be made for system development and
test. (S) A9c2.1

Section 5

APPROACH

5.1   ASSUMPTIONS

This section discusses the structured approach that will be used to replace the dissemination and distribution systems with   MHF.   The   steps   leading   towards   successful implementation of this system are based on the following assumptions:

1. Introduction of the new system can be accomplished in phases, replacing obsolete hardware with commercially supported equipment and expanding upon the new system from IOC to FOC as required. (S) A9c2.1

2. Commercially available operating system software can be used;   however, it must be ensured that as the industry   adopts   new   techniques,   standards   and conventions,   we   can   keep   pace   by   incorporating follow-on operating system releases. (S) A9c2.1

3. Multiple   sources   will   be   available   for   system hardware and applications software. (S) A9c2.1

4. Applications software can be written in a high level language, minimizing development costs and optimizing maintainability. (S) A9c2.1

5. Vendor support, in terms of training and maintenance, will be available. (S) A9c2.1

6. Sufficient manpower, budgetary resources, and space as identified in the requirements phase will be available. (S) A9c2.1

5.2   PHASE DEFINITIONS

Six major phases of the project are defined which will lead to successful implementation. These phases are:

1. Problem Definition: This document is the output of the problem definition phase.   The scope of the

problem has been estimated and approaches to solving
the problem have been considered. The data necessary
to begin the requirements phase has been gathered.
(S) A9c2.1

2. Requirements: The requirements phase objective
is to collect, specify and document the detailed
goals for the replacement system. A final collection
of goals, which will represent a compromise of some
of the individual goals, will be identified and form
the basis of the system design. An evaluation of the
suitability of the available ODP hardware will be
made. A requirements document will be produced and
become the baseline used for the system design phase
and the acceptance criteria. (S) A9c2.1

3. System Design: For review and control purposes,
system design will be broken into a preliminary and a
detail design. The preliminary design will employ a
hierarchical, top-down, methodology to satisfy the
system requirements and be predicated on the
selection of a specific hardware architecture. Gross
hardware and software partitions will be made and
functions assigned to each. The detailed design will
further partition hardware and software into
well-defined modules which can be implemented without
further design. A system design specification will
be produced and will be the baseline used for the
development phase. A test plan and procedures
document will also be produced for use during the
testing phase to insure that all requirements are
satisfied by the design. (S) A9c2.1

4. Development: The actual implementation of the
design will take place during this phase. Software
modules will be coded and tested; hardware will be
acquired, tested and installed. (S) A9c2.1

5. Testing/Acceptance: Testing will confirm that the
individual modules perform properly together and that
the design and system as implemented will satisfy the
requirements. Acceptance will involve installing the
replacement system and running it according to
pre-established test plan to ensure confidence that
the replacement will operate in a real time
environment as designed. (S) A9c2.1

6. IOC Operation: This will signify completion of
the movement of CDS and ACT-O to a general purpose
environment. (S) A9c2.1

5.3   REQUIREMENTS

During the requirements phase the following major points
will be addressed:

1.   The functions of the current CDS and ACT-O systems;

2.   The   implications of   interfacing systems   which
     communicate with or plan to communicate with CDS;

3.   The physical and security constraints of the new
     system;

4.   Cable Secretariat functions not adequately supported
     by the current CDS and ACT-O systems;

5.   All   current   and   proposed   Agency   cable
     dissemination/distribution systems;

6.   Use of cable dissemination/distribution systems in
     other government agencies;

7.   Outstanding requirements which cannot be met by the
     existing systems;

8.   Costs and benefits of using a contractor to develop
     the system versus in-house development;

9.   Confirmation that available in-house hardware will
     satisfy the requirements;

10. Significant user problems which, if not corrected,
     will force the user to develop remedial systems. (S)
     A9c2.1

Section 6

SCHEDULE

The MHF project, being in its infancy, makes the presentation of a risk-free, accurate schedule impossible. However, based on the information available at this time and assuming in-house development using available in-house hardware, a preliminary schedule is presented. A revised schedule will be produced upon completion of the requirements phase when additional information will allow more reliable estimates.

PHASE COMPLETED	ESTIMATED COMPLETION DATE	DELIVERABLE
Problem Definition	22 December 1980	Scope/Approach Document
Requirements	January 1982	Requirements Document
Initial Operating Capability	1985	Operational Replacement for CDS and ACT-O
Final Operating Capability	1987	Enhanced Operational System

(S) A9c2.1

Section 7

CONCLUSION

The CDS and ACT-O systems are implemented with special
purpose mini-computers designed for a relatively static
environment. With decreasing hardware costs and increased
information handling requirements, these systems have become
the focus of all narrative information flowing to and from
Headquarters. Along with these requirements have come new
communication protocols and techniques which are extremely
expensive to implement on our older equipment. With the end
of the usable lifetime of the hardware approaching, and
faced with high costs of human and financial resources to
make even minor changes, it is an appropriate time to
prepare for the next generation of hardware and software.
(S) A9c2.1

Section 8

GLOSSARY

ACT-O: Automated Communications Terminal-Originating;   a computer system which accounts for and formats cables sent from Headquarters to the field or to another Government facility.

APARS: Automated Printing and Reproduction System; a system of computer-controlled printers.

AXANET: the Agency's narrative communications network.

CDS: Cable Dissemination System; a computer system installed in 1977 to automate the message dissemination functions of the Cable Secretariat.

CMASS: Crisis Management Analyst Support System; a computer system which receives cables from CDS during crisis situations.

COLTS: Computer On Line Text Search; OCR software run on ODP's computer system performing interim SAFE functions.

COMET: Collection of Messages Electrically Transmitted; a DO system for the storage and retrieval of cable traffic.

CRAFT: Communication Records and Field Terminal; a proposed mini-computer system under development by DO to automate overseas record keeping functions.

DATEX: Data Exchange; a computer system which performs switching for bulk data transfer via the Agency's data network.

MAX: Message Exchange; a computer system which performs store and forward message switching functions for AXANET.

MERCURY: an OC computer system under development which will replace MAX and DATEX.

MHF: Message Handling Facility; a proposed computer system which would replace CDS and ACT-O and provide for future electrical distribution and origination functions.

MPS: Message Processing System; ODP-developed software which allows customers to receive cables via the ODP computer network.

MRS: Message Routing System; a system employed by NFAC to print and sort NFAC cables as disseminated by CDS.

OLTA: On Line Text Analysis; OCR software run on ODP computer systems performing interim SAFE functions.

SAFE: Support for the Analyst File Environment; a specialized CIA/DIA information processing computer system now under development by ODP.
(S) A9c2.1